

Remarks

The Office Action mailed September 11, 2006 has been carefully reviewed and the foregoing remarks have been made in consequence thereof.

Claims 1-22 are now pending in this application. Claims 1-22 stand rejected.

The rejection of Claims 1-22 under 35 U.S.C. § 102(b) as being anticipated by Jordan (U.S. Patent 6,172,428) is respectfully traversed.

Jordan describes a digital control system ("DCS") and a method for monitoring, acquiring data, and controlling the operation of a generator set. The DCS receives analog signals 102 and digital signals 112 which are input to a signal conditioning module 104. Analog signals 102 and digital signals 112 are transmitted by the signal conditioning module 104 to a computer interface module ("CIM") 108 and to a personal computer ("PC") 110. CIM 108 and PC 110 executes a software program that displays the measurements of the analog signals 102 and digital signals 112 graphically and in real-time. Set points are contained within the software program for one or more of the received signals 102 against which the signal's measurement is compared. Notably, Jordan does not describe nor suggest determining at least one derived quantity from the plurality of measured process parameters, and recommending a change to an equipment operation based on the measured process parameters and the derived quantities.

Claim 1 recites a method for operating a facility having a plurality of equipment combinations, each equipment combination is operable interactively with at least one other equipment combination, the method comprises "receiving, in real-time, for each of the plurality of equipment combinations, a plurality of measured process parameters . . . determining at least one derived quantity from the plurality of measured process parameters . . . recommending a change to an equipment operation based on the measured process parameters and the derived quantities."

Jordan does not describe nor suggest a method for operating a facility as is recited in Claim 1. Specifically, Jordan does not describe nor suggest a method which includes

determining at least one derived quantity from the plurality of measured process parameters, and recommending a change to an equipment operation based on the measured process parameters and the derived quantities. Rather, in contrast to the present invention, Jordan describes a system wherein a received signal measurement is compared to a corresponding set point that provides a reference level against which the signal's measurement is compared. Applicants respectfully submit that comparing a sensor signal measurement to a corresponding stored set point is not the equivalent of "determining at least one derived quantity from the plurality of measured process parameters."

Furthermore, in contrast to the present invention, Jordan describes a system that provides a detailed message area 406 that describes a fault event, suggests an action to be taken by the operator, and provides a cross-reference number for the operator, which corresponds to a reference manual. Specifically, Jordan describes a process of determining fault events using software that monitors the received signals relating to the analog and digital characteristics of the generator set, and compares the signals with a preset set point to determine whether a fault event is detected. In contrast, Applicants respectfully submit that suggesting an action based on a comparison between a received signal and a preset set point is not equivalent to determining at least one derived quantity from the plurality of measured process parameters, and recommending a change to an equipment operation based on the measured process parameters and the derived quantities. Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Jordan.

Claims 2-8 depend from independent Claim 1. When the recitations of Claims 2-8 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2-8 likewise are patentable over Jordan.

Claim 9 recites a method of analyzing the health of an equipment combination operating in a system that includes a plurality of other equipment combinations coupled to the equipment combination through conduits, and wherein the equipment combination includes a driver machine and a driven machine coupled in rotational synchronicity, wherein the method comprises "receiving a measured process parameter associated with the driver machine . . . receiving a measured process parameter associated with the driven machine . . . receiving at

least one measured process parameter associated with the plurality of other equipment combinations . . . deriving a process parameter quantity for at least one of the measured process parameter associated with the driver machine and the measured process parameter associated with the driven machine using the at least one measured process parameter associated with the plurality of other equipment combinations.”

Jordan does not describe nor suggest a method of analyzing the health of an equipment combination as is recited in Claim 9. More specifically, Jordan does not describe nor suggest a method which includes receiving a measured process parameter associated with a driver machine, receiving a measured process parameter associated with a driven machine, receiving at least one measured process parameter associated with a plurality of other equipment combinations, and deriving a process parameter quantity for at least one of the measured process parameter associated with the driver machine and the measured process parameter associated with the driven machine using the at least one measured process parameter associated with the plurality of other equipment combinations. Rather, in contrast to the present invention, Jordan describes a system wherein a received signal measurement is compared to a corresponding set point that provides a reference level against which the signal's measurement is compared. In contrast, Applicants respectfully submit that comparing a sensor signal measurement to a corresponding stored set point is not the equivalent of “deriving a process parameter quantity for at least one of the measured process parameter associated with the driver machine and the measured process parameter associated with the driven machine using the at least one measured process parameter associated with the plurality of other equipment combinations.” Accordingly, for at least the reasons set forth above, Claim 9 is submitted to be patentable over Jordan.

Claims 10 and 11 depend from independent Claim 9. When the recitations of Claims 10 and 11 are considered in combination with the recitations of Claim 9, Applicants submit that dependent Claims 10 and 11 likewise are patentable over Jordan.

Claim 12 recites an integrated monitoring and control system for a plant wherein the plant has a plurality of equipment combinations that are operable interactively with each other and with individual equipment and wherein the combinations are operable to maintain

selected plant operational conditions, wherein the monitoring and control system comprises “a plurality of sensors operatively coupled to the equipment combinations, the plurality of sensors measuring process parameters for monitoring plant operation and assessing equipment combination condition, and providing output signals to said monitoring and control system . . . a derived quantity layer communicatively coupled to a data bus, said derived quantity layer configured to . . . receive the measured process parameters . . . compute values for process parameters using the measured process parameters . . . a rule set layer comprising at least one rule associated with at least some of the plurality of equipment combinations for determining a health of the equipment combination . . . a recommendation layer for correlating the health of the equipment combination to at least one of a mitigating procedure, a maintaining procedure, and an operation procedure.”

Jordan does not describe nor suggest an integrated monitoring and control system for a plant as is recited in Claim 12. More specifically, Jordan does not describe nor suggest a derived quantity layer communicatively coupled to a data bus, the derived quantity layer configured to receive the measured process parameters, and compute values for the process parameters using the measured process parameters, a rule set layer comprising at least one rule associated with at least some of a plurality of equipment combinations for determining a health of the equipment combination, and a recommendation layer for correlating the health of the equipment combination to at least one of a mitigating procedure, a maintaining procedure, and an operation procedure. Rather, in contrast to the present invention, Jordan describes a system wherein a received signal measurement is compared to a corresponding set point that provides a reference level against which the signal's measurement is compared. In contrast, Applicants respectfully submit that comparing a sensor signal measurement to a corresponding stored set point is not the equivalent of to a derived quantity layer configured to “compute values for process parameters using the measured process parameters.” Moreover, Jordan describes software which gives an operator a suggested action in response to a fault condition. Specifically, Jordan describes a process of determining fault events using software that monitors the received signals relating to the analog and digital characteristics of the generator set, and compares the signals with a preset set point to determine whether a fault event is detected. Applicant respectfully submits that software

which generates a suggested action based on whether a received signal measurement reaches a preset set point is not equivalent to “a rule set layer comprising at least one rule associated with at least some of the plurality of equipment combinations for determining a health of the equipment combination and a recommendation layer for correlating the health of the equipment combination to at least one of a mitigating procedure, a maintaining procedure, and an operation procedure.” Accordingly, for at least the reasons set forth above, Claim 12 is submitted to be patentable over Jordan.

Claims 13-19 depend from independent Claim 12. When the recitations of Claims 13-19 are considered in combination with the recitations of Claim 12, Applicants submit that dependent Claims 13-19 likewise are patentable over Jordan.

Claim 20 recites a computer program embodied on a computer readable medium for monitoring a plant, the plant having a plurality of equipment combinations operating interactively with each other and with individual equipment, the program comprising “a code segment that controls a computer that receives a plurality of process parameters from sensors operatively coupled to the equipment combinations and individual equipment and then . . . derives values for process parameters using the measured process parameters . . . selects a rule from a set of rules comprising a plurality of commands that direct data analysis for each at least one of measured process parameter, a derived quantity, a plurality of measured process parameters and a derived quantities associated with an equipment combination . . . recommends at least one of a mitigating procedure, a maintaining procedure, and an operation procedure.”

Jordan does not describe nor suggests a computer program as is recited in Claim 20. More specifically, Jordan does not describe nor suggest a computer program that controls a computer that receives a plurality of process parameters from sensors operatively coupled to equipment combinations and individual equipment, derives values for process parameters using the measured process parameters, selects a rule from a set of rules comprising a plurality of commands that direct data analysis for each at least one of measured process parameter, a derived quantity, a plurality of measured process parameters and a derived quantities associated with an equipment combination, and recommends at least one of a

mitigating procedure, a maintaining procedure, and an operation procedure. Rather, in contrast to the present invention, Jordan describes a system wherein a received signal measurement is compared to a corresponding set point that provides a reference level against which the signal's measurement is compared. Applicants respectfully submit that comparing a sensor signal measurement to a corresponding stored set point is not the equivalent of a computer program that "derives values for process parameters using the measured process parameters." Moreover, Jordan describes software which gives an operator a suggested action in response to a fault condition. Specifically, Jordan describes a process of determining fault events using software that monitors the received signals relating to the analog and digital characteristics of the generator set, and compares the signals with a preset set point to determine whether a fault event is detected. Applicant respectfully submits that software which generates a suggested action based on whether a received signal measurement reaches a preset set point is not equivalent to a computer program that "selects a rule from a set of rules comprising a plurality of commands that direct data analysis for each at least one of measured process parameter, a derived quantity, a plurality of measured process parameters and a derived quantities associated with an equipment combination." Furthermore, Jordan recites that "there is a further desire to provide a digital control system for monitoring and controlling generator sets that may provide an operator with guidance or suggestions as to what corrective or preventive actions should be taken in response to a particular problem or condition and recommends at least one of a mitigating procedure, a maintaining procedure, and an operation procedure." Accordingly, for at least the reasons set forth above, Claim 20 is submitted to be patentable over Jordan.

Claims 21 and 22 depend from independent Claim 20. When the recitations of Claims 21 and 22 are considered in combination with the recitations of Claim 20, Applicants submit that dependent Claims 21 and 22 likewise are patentable over Jordan.

For the reasons set forth above, Applicants respectfully request that the Section 102(b) rejection of Claims 1-22 be withdrawn.

PATENT
137243

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'R. B. Reeser III', written over a horizontal line.

Robert B. Reeser III
Registration No. 45,548
ARMSTRONG TEASDALE LLP
One Metropolitan Square, Suite 2600
St. Louis, Missouri 63102-2740
(314) 621-5070